Coconino National Forest Plan Revision

Mixed Conifer with Frequent Fire (also referred to as Dry Mixed Conifer)

General Description

- Mixed conifer with frequent fire covers approximately 79,060 acres on Coconino NF (along with mixed conifer with infrequent fire). This forest type occurs at elevations above ponderosa pine between 5,500 and 9,500 feet on mountain slopes and may also occur in canyons and north facing slopes.

- These conifer forests are dominated by mainly shade intolerant trees such as: ponderosa pine, southwestern white pine, limber pine, quaking aspen, and Gambel oak, with a lesser presence of New Mexican locust and big toothed maple as well as shade tolerant species such as white fir and blue spruce. Mid-tolerant species such as Douglas-fir are common. Aspen may occur as individual trees or small groups.

- This forest type typically occurs with an understory of graminoids, forbs, and shrubs. The understory is more similar to ponderosa pine and it generally has more sedges, mosses, and liverworts. Big toothed maple only occurs on the Mogollon Rim Ranger District.

- Direction regarding Mexican spotted owl habitat (MSO) in this vegetation community is contained in the MSO Recovery Plan and takes precedence over direction for species not listed as threatened or endangered by U.S. Fish and Wildlife Service.

Desired Conditions (landscape scale: 10,000 + acres)

- The dry mixed conifer vegetation community is a mosaic of forest conditions composed of structural stages ranging from young to old trees. Old growth is well-distributed in the landscape and occurs as groups of old trees, often mixed with groups of younger trees or as individual patches.

- Forest appearance is variable but generally uneven-aged and open; occasional patches of even-aged structure are present. The forest arrangement is in small clumps and groups of trees interspersed within variably-sized openings consisting of graminoid, forb, and shrub associations similar to historic patterns. Openings typically range from 10 percent in more productive forested sites to 50 percent in the less productive forested sites. Size, shape, number of trees per group, and number of groups per area are variable across the landscape.

- Where they naturally occur, groups and patches and all structural stages of oak are present. Denser tree conditions exist in some locations such as north facing slopes and canyon bottoms.

- The dry mixed conifer forest vegetation community is composed predominantly of vigorous trees, but declining trees are a component and provide for snags, top-killed, lightning- and fire-scarred trees, and coarse woody debris (>3 inch diameter), all well-distributed throughout the landscape. A variety of snag species and coarse woody debris are well distributed throughout the landscape.

- Snags are typically 18 inches or greater at DBH and average 3 per acre. Downed logs (>12 inch diameter at mid-point, >8 feet long) average 3 per acre within the forested area of the landscape. Coarse woody debris (greater than 3 inch diameter), including downed logs, ranges from 5 to 15 tons per acre to maintain long term soil productivity.

- The composition, structure, and function of vegetative conditions are resilient to the frequency, extent, severity of disturbances, and to climate variability. The landscape is a functioning ecosystem that contains all its components, processes, and conditions that result from endemic levels of disturbances (e.g. insects, diseases, fire, and wind), including snags, downed logs, and old trees. Graminoids, forbs, shrubs, needle cast (fine fuels), and small trees maintain the natural fire regime.

- Organic ground cover and native herbaceous vegetation provide protection of soil, moisture infiltration, and contribute to plant and animal diversity and to ecosystem function.

- Frequent, low severity fires (Fire Regime I) are characteristic. Natural and human caused disturbances are sufficient to maintain desired overall tree density, structure, species composition, coarse woody debris, and nutrient cycling.

Desired Conditions (mid-scale: 100-1,000 acres)

- The dry mixed conifer forest vegetation community is characterized by variation in the size and number of tree groups depending on elevation, soil type, aspect, and site productivity. The more biologically productive forested sites contain more trees per group and more groups per area.

- Openings typically range from 10 percent in more productive sites to 50 percent in the less productive sites. Tree density within forested areas generally ranges from 30 to 100 square foot basal area per acre. Denser tree conditions exist in some locations such as north facing slopes and canyon bottoms.

- The mosaic of tree groups generally comprises an uneven-aged forest with all age classes and structural stages. Occasionally small patches (generally less than 50 acres) of even-

aged forest structure are present. Disturbances sustain the overall age and structural distribution.

- Frequent low severity fires (<25 percent mortality or topkill) occurring every 5 to 36 years are characteristic of this forest, including throughout the range of Mexican spotted owls and northern goshawks. Fires burn primarily on the forest floor and do not spread between tree groups as crown fire. Grasses, forbs, shrubs, and needle cast (fine fuels) maintain the natural fire regime with a greater proportion of the ground cover as grasses and forbs as opposed to needle cast.

- Forest structure in the wildland urban interface (WUI)[1] is similar to conditions described above or may be composed of smaller and more widely spaced groups of trees.

- Basal area per mid-aged to old tree group in northern goshawk PFAs is 10 to 20 percent higher than northern goshawk foraging areas and the general forest. Goshawk nest areas have forest conditions that are multi-aged but are dominated by large trees with relatively dense canopies consistent with current technical guides for northern goshawk in the southwestern U.S.

- Where they naturally occur, all age classes of aspen and maple are present in groups or patches and are regenerating and vigorous. A diverse understory comprised of native herbaceous and shrub species is has a variety of seral and age classes and is vigorous and regenerating.

Desired Conditions (fine scale: ≤ 10acres)

- Trees typically occur in irregularly shaped groups and are variably-spaced with some tight clumps. Crowns of trees within the mid-aged to old groups are interlocking or nearly interlocking.

- Openings surrounding tree groups are variably-shaped and comprised of a mix of graminoids, forbs and shrubs. Some openings contain individual trees or snags. Trees within groups are of similar or variable ages and one or more species. Size of tree groups typically is less than 1 acre. Groups at the mid-age to old stages consist of 2 to approximately 50 trees per group.

- Mistletoe is present in isolated pockets, but the degree of severity and amount of mortality varies among the parasitized trees. Witches brooms may form on infected trees, providing habitat for wildlife species.

Guidelines

[1] Note –each Forest needs to provide the definition for WUI that they are using.

- A minimum of 3 nest areas and 3 replacement nest areas should be located per territory. Goshawk nest and replacement nest areas should generally be located in drainages, at the base of slopes, and on northerly (NW to NE) aspects. Nest areas should generally be 25 to 30 acres in size.

- Goshawk Post-fledging Family Areas (PFAs) of approximately 420 acres in size should be designated surrounding the nest sites.

- In goshawk foraging areas and PFAs, groups of 3 to 5 reserve trees should be retained within management-created openings greater than 1 acre in ponderosa pine and dry mixed conifer. In wet mixed conifer and spruce-fir, except where the strong potential for wind-throw prevents the possibility of viable reserve trees, or insect and/or disease prevent the eventual development of regeneration into large trees, 6 reserve trees should be retained within management-created openings greater than 0.5 acre.

- Human presence should be minimized in occupied goshawk nest areas during nesting season which is typically March 1 through September 30.

Management Approach – *[none currently identified]*

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